WE CLAIM:

1. A coating, comprising:
a silane and
a biopolymer, wherein said biopolymer is covalently linked to the silane.

2. The coating of claim 1, wherein the silane has functionality capable of reacting with a hydroxyl group.

3. The coating of claim 1, wherein the silane comprises at least one of isocyanate, isothiocyanate, ester, anhydride, acyl halide, alkyl halide, epoxide, or aziridine functionality

4. The coating of claim 1, wherein the silane comprises isocyanate functionality.

5. The coating of claim 4, wherein the biopolymer is derived from heparin-tridodecylmethylammonium chloride.

6. The coating of claim 1, wherein the biopolymer is derived from a complex selected from the group consisting of heparin-tridodecylmethylammonium chloride, heparin-benzalkonium chloride, heparin-stearalkonium chloride, heparin-poly-N-vinyl-pyrolidone, heparin-lecithin, heparin-didodecyldimethylammonium bromide, heparin-pyridinium chloride, and heparin-synthetic glycolipid complex.

7. The coating of claim 1, wherein the biopolymer has hydroxyl or amine functional groups that can react with isocyanate functionality.

8. The coating of claim 1, wherein the biopolymer comprises an adduct of heparin molecules.

9. The coating of claim 7, wherein the heparin is provided in a form capable of dissolving in an organic solvent.

10. The coating of claim 1, wherein the biopolymer provides thromboresistance.

11. The coating of claim 1, wherein the biopolymer is derived from heparin-tridodecylmethylammonium chloride.

12. The coating of claim 1, further comprising at least one of a wetting agent and an additive.

13. The coating of claim 1, wherein the silane has an organic chain between isocyanate and silane functional groups.

14. A coating for a medical device, wherein thromboresistance activity can be modified, comprising

heparin-tridodecylmethylammonium chloride;

a silane having isocyanate functionality; and

an organic solvent.

15. The coating of claim 14, wherein the quantity of at least one of the silane and the heparin-tridodecylmethylammonium chloride complex is selected to provide desired thromboresistance.

16. The coating of claim 15, wherein the concentration of the silane is between about one-tenth percent and about twenty percent.

17. The coating of claim 15, wherein the concentration of the silane is between about one-tenth percent and about ten percent.

18. The coating of claim 15, wherein the concentration of the silane is between about one-tenth percent and about five percent.

19. The coating of claim 15, wherein the concentration of the silane is between about one-half percent and about four percent.

20. The coating of claim 15, wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about twenty percent.

21. The coating of claim 15, wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about ten percent.

22. The coating of claim 15, wherein the concentration of heparin-tridodecylmethylammonium chloride is between about one-tenth percent and about five percent.

23. The coating of claim 15, wherein the concentration of heparin-tridodecylmethylammonium chloride is between about one-tenth percent and about four percent.

24. The coating of claim 15, wherein the concentration, of the silane is about five-tenths percent and the concentration of the heparin-tridodecylmethylammonium chloride is about two-tenths percent.

25. The coating of claim 14, wherein the organic solvent tetrahydrofuran is used to prepare the solution applied to the surface.

26. The coating of claim 14, wherein the silane and the heparin-tridodecylmethylammonium chloride are provided in a single layer.

27. The coating of claim 14, further comprising a surface active agent.

28. The coating of claim 27, wherein the surface active agent is Triton.

29. A coated medical device, comprising:

a substrate, and

a coating derived from heparin-tridodecylmethylammonium chloride, a silane having isocyanate functionality, and an organic solvent.

30. The coated medical device of claim 29, wherein the solution applied to the surface comprises silane and heparin-tridodecylmethylammonium chloride, and said solution is applied directly to the substrate without the use of a primer.

31. The medical device of claim 1-9, wherein the silane and the heparin-tridodecylmethylammonium chloride are applied in a single layer.

32. The device of claim 29, wherein the heparin is covalently bonded to the substrate.

33. The device of claim 19, wherein the device is a stent.

34. The device of claim 33, wherein the stent is made of at least one of stainless steel, nitinol, tantalum, glass, ceramic, nickel, titanium and aluminum.

35. A method of coating a medical device, comprising covalently bonding a heparin to the medical device.

36. The method of claim 35, further comprising:

applying a silane having functionality capable of reacting with a hydroxyl group to the medical device.

37. The method of claim 36, wherein the silane has isocyanate functionality.

38. The method of claim 35, wherein the heparin is derived from heparin-tridodecylmethylammonium chloride.

39. The method of claim 36, further comprising:

dissolving heparin-tridodecylmethylammonium chloride and the silane in an organic solvent prior to applying the solution to the substrate.

40. The method of claim 39, wherein the organic solvent is tetrahydrofuran.

41. The method of claim 36, further comprising:

applying the heparin-tridodecylmethylammonium chloride and the silane to the medical device in a single layer.

42. The method of claim 36, further comprising:

adjusting the concentration, in the solution applied to the surface, of at least one of the silane and the heparin-tridodecylmethylammonium chloride to provide desired thromboresistance.

43. The method of claim 42, wherein the concentration of the silane is between about one-tenth percent and about twenty percent.

44. The method of claim 42. wherein the concentration of the silane is between about one-tenth percent and about ten percent.

45. The method of claim 42, wherein the concentration of the silane is between about one-tenth percent and about five percent.

46. The method of claim 41, wherein the concentration of the silane is between about one-half percent and about four percent.

47. The method of claim 42, wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about twenty percent.

48. The method of claim 42. wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about ten percent.

49. The method of claim 42, wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about five percent.

50. The method of claim 42 wherein the concentration of heparintridodecylmethyl-ammonium chloride is between about one-tenth percent and about four percent.

51. The method of claim 42, wherein the concentration, of the silane is about five-tenths percent and the concentration of the heparin-tridodecylmethylammonium chloride is about two-tenths percent.

52. The method of claim 36, further comprising:

oxidizing the medical device prior to applying the silane and the heparin-tridodecylmethylammonium chloride.

53. A method of coating a medical device, comprising:

dissolving heparin-tridodecylmethylammonium chloride and a silane having isocyanate functionality in an organic solvent and applying said solution to the device to form a coating on the medical device.

54. The method of claim 53, further comprising:

oxidizing a surface of the medical device prior to applying the coating.

55. The method of claim 53, further comprising:
providing a wetting agent in conjunction with applying the coating.

56. The method of claim 53, further comprising:
adding a film-forming agent to the coating.

57. The method of claim 56, wherein the film forming agent is selected from the group consisting of cellulose esters, polydialkyl siloxanes, polyurethanes, acrylic polymers, elastomers, biodegradable polymers, polylactic acid, polyglycolic acid, copolymers of polylactic acid and polyglycolic acid and poly(e-caprolactone).

58. The method of claim 53, further comprising:
adding a non-functional silane to the coating.

59. The method of claim 58, wherein the non-functional silanes are selected from the group consisting of chain alkyltriakoxysilanes and phenyltriakoxysilanes.